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RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/082,014

DATE: 03/13/2002 P.5
TIME: 15:15:02

#2

Input Set : A:\ICC130.ST25.txt
Output Set: N:\CRF3\03132002\J082014.raw

```
      3 <110> APPLICANT: Birkett, Ashley J.
      5 <120> TITLE OF INVENTION: IMMUNOGENIC HBc CHIMER PARTICLES STABILIZED WITH AN N-
TERMINAL CYSTEINE
      7 <130> FILE REFERENCE: ICC-130.0 4564/85124
C-->  9 <140> CURRENT APPLICATION NUMBER: US/10/082,014
C--> 10 <141> CURRENT FILING DATE: 2002-02-22
     12 <150> PRIOR APPLICATION NUMBER: 09/930,915
     13 <151> PRIOR FILING DATE: 2001-08-15
     15 <160> NUMBER OF SEQ ID NOS: 290
     17 <170> SOFTWARE: PatentIn version 3.1
     19 <210> SEQ ID NO: 1
     20 <211> LENGTH: 183
     21 <212> TYPE: PRT
     22 <213> ORGANISM: Hepatitis B virus
     24 <400> SEQUENCE: 1
     26 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
     27 1               5                  10                  15
     30 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
     31             20                  25                  30
     34 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
     35         35                  40                  45
     38 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
     39     50                  55                  60
     42 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
     43 65                  70                  75                  80
     46 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
     47                 85                  90                  95
     50 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
     51             100                 105                 110
     54 Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
     55         115                 120                 125
     58 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
     59     130                 135                 140
     62 Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
     63 145                 150                 155                 160
     66 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
     67                 165                 170                 175
     70 Gln Ser Arg Glu Ser Gln Cys
     71             180
     74 <210> SEQ ID NO: 2
     75 <211> LENGTH: 185
     76 <212> TYPE: PRT
     77 <213> ORGANISM: Hepatitis B virus
     79 <400> SEQUENCE: 2
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RAW SEQUENCE LISTING DATE: 03/13/2002
PATENT APPLICATION: US/10/082,014 TIME: 15:15:02

Input Set : A:\ICC130.ST25.txt
Output Set: N:\CRF3\03132002\J082014.raw

```
81 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
82 1               5                  10                  15
85 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
86             20                  25                  30
89 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
90         35                  40                  45
93 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
94     50                  55                  60
97 Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Gln Asp Pro Ala
98 65                  70                  75                  80
101 Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
102                 85                  90                  95
105 Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
106             100                 105                 110
109 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
110         115                 120                 125
113 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
114     130                 135                 140
117 Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
118 145                 150                 155                 160
121 Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
122                 165                 170                 175
125 Arg Ser Gln Ser Arg Glu Ser Gln Cys
126             180                 185
129 <210> SEQ ID NO: 3
130 <211> LENGTH: 185
131 <212> TYPE: PRT
132 <213> ORGANISM: Hepatitis B virus
134 <400> SEQUENCE: 3
136 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
137 1               5                  10                  15
140 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
141             20                  25                  30
144 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
145         35                  40                  45
148 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
149     50                  55                  60
152 Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
153 65                  70                  75                  80
156 Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Val Gly Leu Lys
157                 85                  90                  95
160 Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
161             100                 105                 110
164 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
165         115                 120                 125
168 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
169     130                 135                 140
172 Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
173 145                 150                 155                 160
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/082,014

DATE: 03/13/2002
TIME: 15:15:02

Input Set : A:\ICC130.ST25.txt
Output Set: N:\CRF3\03132002\J082014.raw

```
176 Arg Thr Pro Ser Pro Arg Arg Arg Pro Ser Gln Ser Pro Arg Arg Arg
177                 165                 170                 175
180 Arg Ser Gln Ser Arg Glu Ser Gln Cys
181             180                 185
184 <210> SEQ ID NO: 4
185 <211> LENGTH: 183
186 <212> TYPE: PRT
187 <213> ORGANISM: Hepatitis B virus
189 <400> SEQUENCE: 4
191 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
192 1               5                   10                  15
195 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
196             20                  25                  30
199 Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
200         35                  40                  45
203 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
204     50                  55                  60
207 Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
208 65                  70                  75                  80
211 Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
212                 85                  90                  95
215 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
216             100                 105                 110
219 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
220         115                 120                 125
223 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
224     130                 135                 140
227 Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
228 145                 150                 155                 160
231 Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
232                 165                 170                 175
235 Gln Ser Arg Glu Ser Gln Cys
236             180
239 <210> SEQ ID NO: 5
240 <211> LENGTH: 183
241 <212> TYPE: PRT
242 <213> ORGANISM: Marmota monax
244 <400> SEQUENCE: 5
246 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu
247 1               5                   10                  15
250 Asn Phe Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp
251             20                  25                  30
254 Thr Ala Thr Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys
255         35                  40                  45
258 Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
259     50                  55                  60
262 Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
263 65                  70                  75                  80
266 Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
```

RAW SEQUENCE LISTING DATE: 03/13/2002
PATENT APPLICATION: US/10/082,014 TIME: 15:15:02

Input Set : A:\ICC130.ST25.txt
Output Set: N:\CRF3\03132002\J082014.raw

```
267                 85                  90                  95
270 Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
271             100                 105                 110
274 His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
275         115                 120                 125
278 Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
279     130                 135                 140
282 Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
283 145                 150                 155                 160
286 Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro
287                 165                 170                 175
290 Arg Arg Arg Arg Ser Gln Cys
291             180
294 <210> SEQ ID NO: 6
295 <211> LENGTH: 217
296 <212> TYPE: PRT
297 <213> ORGANISM: Spermophilus variegatus
299 <400> SEQUENCE: 6
301 Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro
302 1               5                   10                  15
305 Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
306             20                  25                  30
309 Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
310         35                  40                  45
313 Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
314     50                  55                  60
317 Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
318 65                  70                  75                  80
321 His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr
322                 85                  90                  95
325 Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
326             100                 105                 110
329 Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln
330         115                 120                 125
333 Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gly His Thr Val
334     130                 135                 140
337 Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro
338 145                 150                 155                 160
341 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr
342                 165                 170                 175
345 Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg
346             180                 185                 190
349 Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
350         195                 200                 205
353 Arg Ser Gln Ser Pro Ala Ser Asn Cys
354     210                 215
357 <210> SEQ ID NO: 7
358 <211> LENGTH: 51
359 <212> TYPE: DNA
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RAW SEQUENCE LISTING DATE: 03/13/2002
PATENT APPLICATION: US/10/082,014 TIME: 15:15:03

Input Set : A:\ICC130.ST25.txt
Output Set: N:\CRF3\03132002\J082014.raw

```
360 <213> ORGANISM: Artificial Sequence
362 <220> FEATURE:
363 <223> OTHER INFORMATION: plasmid pkk223
365 <400> SEQUENCE: 7
366 ttcacacagg aaacagaatt cccggggatc cgtcgacctg cagccaagct t                51
369 <210> SEQ ID NO: 8
370 <211> LENGTH: 38
371 <212> TYPE: DNA
372 <213> ORGANISM: Artificial Sequence
374 <220> FEATURE:
375 <223> OTHER INFORMATION: plasmid pkk223
377 <400> SEQUENCE: 8
378 ttcacataag gaggaaaaaa ccatgggatc cgaagctt                              38
381 <210> SEQ ID NO: 9
382 <211> LENGTH: 15
383 <212> TYPE: PRT
384 <213> ORGANISM: Streptococcus pneumoniae
386 <400> SEQUENCE: 9
388 Lys Leu Glu Glu Leu Ser Asp Lys Ile Asp Glu Leu Asp Ala Glu
389 1               5                   10                  15
392 <210> SEQ ID NO: 10
393 <211> LENGTH: 35
394 <212> TYPE: PRT
395 <213> ORGANISM: Streptococcus pneumoniae
397 <400> SEQUENCE: 10
399 Gln Lys Lys Tyr Asp Glu Asp Gln Lys Lys Thr Glu Glu Lys Ala Ala
400 1               5                   10                  15
403 Leu Glu Lys Ala Ala Ser Glu Glu Met Asp Lys Ala Val Ala Ala Val
404             20                  25                  30
407 Gln Gln Ala
408         35
411 <210> SEQ ID NO: 11
412 <211> LENGTH: 27
413 <212> TYPE: PRT
414 <213> ORGANISM: Cryptosporidium parvum
416 <400> SEQUENCE: 11
418 Gln Asp Lys Pro Ala Asp Ala Pro Ala Ala Glu Ala Pro Ala Ala Glu
419 1               5                   10                  15
422 Pro Ala Ala Gln Gln Asp Lys Pro Ala Asp Ala
423             20                  25
426 <210> SEQ ID NO: 12
427 <211> LENGTH: 17
428 <212> TYPE: PRT
429 <213> ORGANISM: Human immunodeficiency virus
431 <400> SEQUENCE: 12
433 Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Ile Thr Lys
434 1               5                   10                  15
437 Asn
441 <210> SEQ ID NO: 13
```

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

**VERIFICATION SUMMARY** DATE: 03/13/2002
PATENT APPLICATION: **US/10/082,014** TIME: 15:15:04

Input Set : **A:\ICC130.ST25.txt**
Output Set: **N:\CRF3\03132002\J082014.raw**

L:9 M:270 C: Current Application Number differs, Replaced Current Application Number
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:863 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32
L:867 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32